REMARKS

Claims 1, 16-18, 23 and 25 have been cancelled; claims 2, 8, 9, 19, 20-22, 24 and 26-28 have been amended; claims 2-15, 19-22, 24 and 26-28 remain pending in the application.

Claims 1, 18, 20-23 and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by the XACCT Usage Overview of 1997. In response, claims 1, 18 and 23 have been cancelled, claim 9 has been amended to depend from claim 2, claims 20-22 have been amended to depend from claim 19, and claims 26-28 have been amended to depend from claim 24. Claims 2, 19 and 24 have been re-written in independent form.

Claims 2-17, 19, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the XACCT Usage Overview as applied to claim 1, in view of the "ICMP Protocol Overview", and further in view of U.S. Patent No. 6, 243,667, to Kerr et al. ("Kerr"). Claims 16-17 and 25 have been cancelled. This rejection as applied to amended (now independent) claims 2, 19 and 24, as well as dependent claims3-15, 20-22 and 26-28, is respectfully traversed.

Claim 2 is directed to a method of analyzing a flow for an accounting application. The method of claim 2 includes capturing an IP packet from a network segment and determining if the IP packet includes a message of a first protocol type for providing error reporting. The message has an IP packet that triggered an error event embedded within, and the embedded IP packet is of a second protocol type and has a flow associated with it. The method further includes correlating the flow associated with the embedded IP packet to a stored parent flow of a given state, thereby associating the error event with the given state of the stored parent flow, and using the results to provide well-informed accounting information related to the flow to the accounting application.

The XACCT Usage Overview does not teach or suggest any elements of the claimed flow analysis method as set forth in claim 2. Rather, the XACCT Usage Overview describes a system that collects accounting information from different sources and uses that information to produce accounting records. No where in the XACCT Usage Overview is it suggested that the system performs any kind of flow analysis on captured packets, let alone the type of analysis that is set forth in claim 2, that is, an analysis that associates, for a given flow, an error event with stored state information so that well-informed accounting information related to the flow may be provided to an accounting application.

Nor does Kerr teach or suggest the method of claim 2. In particular, Kerr fails to teach or suggest determining if an IP packet includes a message of a protocol type for providing error reporting, correlating a flow associated with an IP packet embedded in the error reporting message to a stored parent flow so that an error event triggered by the embedded IP packet is associated with the state of the stored parent flow, and using the results to provide well-informed accounting information related to the flow to an accounting application, as set forth in claim 2. Kerr describes building a message flow cache that stores information about message flows and using that information to process packets associated with each message flow. A packet's flow is determined by examining the packet's header information, including source and destination address, along with protocol type. The information relates to the proper treatment of packets in a message flow, e.g., treatment with regard to switching, access control and encryption (Col. 4, lines 20-34). Kerr also describes entering into a flow's cache entry for each packet some type of accounting information, such as timestamps, a cumulative count of number of packets and cumulative count of number of bytes for the flow (Col. 5, lines 10-15; Col. 6, lines 56-64). Information stored in a flow entry can be used to generate historical information, which can be recorded in a flow table and subsequently reported to an external device (Col. 7, lines 56-67; Col. 8, lines 1-50).

Thus, Kerr teaches associating a packet with stored flow information based on the packet's header information (including protocol type), using some flow information to determine how to route the packet and updating other flow information, e.g., accounting information, for reporting purposes. The routing device in Kerr does not, however, examine a packet's payload if the protocol type indicates an error message, and correlate the flow of the embedded packet (that is, the error message payload) with a stored parent flow to associate an error event triggered by the embedded packet with state information of the stored parent flow. In other words, Kerr performs a flow correlation for a packet, but not a packet embedded within that packet. For a packet having a protocol type corresponding to an error reporting protocol, such as ICMP (described in the cited ICMP Protocol Overview, and discussed on pages 54-55 of Applicant's specification), for example, Kerr does not suggest any analysis of the embedded packet information, more particularly, correlating its flow to a stored parent flow to associate an error

event with stored state information, and using the results to provide well-informed accounting information to an accounting application.

Thus, none of the cited art, either alone or in combination, teaches or suggests the method of claim 2. At most, the combined teachings of XACCT Usage Overview, the ICMP Protocol Overview and Kerr would yield no more than a mechanism by which a flow of a packet of a particular protocol type (e.g., ICMP) would be matched to a cache entry of flow information, including accounting information, which is updated and perhaps provided for use in generating accounting records. Consequently, method claim 2 is patentably distinct over the cited art and therefore allowable.

Corresponding computer program claim 19 and system claim 24 are similar in scope to method claim 2 and are therefore allowable for the same reasons.

Dependent claims 3-15, 20-22 and 26-28 are allowable for at least the same reasons as the independent claim from which they each depend, either directly or indirectly.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that all pending claims be allowed. Enclosed is a Petition for Extension of Time and a check in the amount of the required fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the claims:

Claim 1, 16-18, 23 and 25 have been cancelled.

Claims 2, 8, 9, 19-22, 24 and 26-28 have been amended as follows:

2.   (Once Amended) [The method of claim 1, wherein mapping comprises:] A method of analyzing a flow for an accounting application, comprising:

capturing an IP packet from a network segment;

determining if the captured IP packet includes a message of [the] a first protocol type for providing error reporting, the message having an IP packet that triggered an error event embedded within, the embedded IP packet being of [the] a second protocol type and having a flow associated therewith; [and]

correlating the flow associated with the embedded IP packet to a stored parent flow of a given state, thereby associating the error event with the given state of the stored parent flow; and

using the results of the correlating to provide well-informed accounting information related to the flow to the accounting application.

8.   (Once Amended) The method of claim [1] 6, wherein [mapping] using [further] comprises:

reporting a transaction stop indication in response to the change of the given flow state to the rejected state.

9.   (Once Amended) The method of claim 2, wherein [mapping] correlating further comprises:

processing the captured IP packet.

19.   (Once Amended) [The computer program product of claim 18, wherein the instructions to cause a computer to map protocol information further comprise instructions to cause a computer to] A computer program product residing on a computer-readable medium for analyzing a flow for an accounting application, comprising instructions to cause a computer to:

    capture an IP packet from a network segment;

    determine if the captured IP packet includes a message of [the] a first protocol type for providing error reporting, the message having an embedded IP packet that triggered an error event, the embedded IP packet being of [the] a second protocol type and having a flow associated therewith; [and]

    correlate the flow associated with the embedded IP packet to a stored parent flow of a given state to associate the error event with the given state of the stored parent flow; and

    use results of the correlating to provide well-informed accounting information related to the flow to the accounting application.

20.   (Once Amended) The computer program product of claim [18] 19, wherein the first protocol is the Internet Control Message Protocol.

21.   (Once Amended) The computer program product of claim [18] 19, wherein the second protocol type is the Transmission Control Protocol.

22.   (Once Amended) The computer program product of claim [18] 19, wherein the first protocol type is the Internet Control Message Protocol and the second protocol type is the Transmission Control Protocol.

24.   (Once Amended) [The system of claim 23 wherein the instructions to cause a computer to map protocol information further comprise instructions to cause a computer to] <u>A system for flow of network packet data, comprising</u>:

>   <u>a processor;</u>

>   <u>a memory storing a computer program product residing on a computer-readable medium for analyzing a flow for an accounting application, comprising instructions to cause a computer to:</u>

>   capture an IP packet from a network segment;

>   determine if the captured IP packet includes a message of the first protocol type for providing error reporting, the message having an embedded IP packet that triggered an error event, the embedded IP packet being of the second protocol type and having a flow associated therewith;

>   <u>correlate the flow associated with the embedded IP packet to a stored parent flow of a given state to associate the error event with the given state of the stored parent flow; and</u>

>   <u>use the results of the correlating to provide well-informed accounting information related to the flow to the accounting application.</u>

26.   (Once Amended) The system of claim [23] <u>24</u> wherein the first protocol is the Internet Control Message Protocol.

27.   (Once Amended) The system of claim [23] <u>24</u> wherein the second protocol type is the Transmission Control Protocol.

28.   (Once Amended) The system of claim [23] <u>24</u> wherein the first protocol type is the Internet Control Message Protocol and the second protocol type is the Transmission Control Protocol.